

Work Order ID 145910

Tuesday, June 07, 2016 8:17:07 AM

145910

Page 1

Item ID: D4149-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Lug Plate, Aft

Start Date: 5/4/2016 Start Qty: 20.00

20

Cust Item ID:

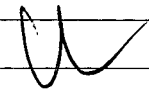
Required Date: 5/5/2016 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan: 

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D4149

C

105

0.00

105

Purchasing

Purchasing

14.75

Memo

ISSUE PO 32646
CUT PER DRWG D4149 REV.C

0.00

20

JUN 08 2016

DAS
13
9-89

115

Receive & Inspect for Damage & Mat'l Certs

0.00

115

Packaging

Packaging

Memo

0.00

20x SP/6-6-21

125

QC6- Inspect dimensions to drawing

0.00

125

QC

Quality Control

Memo

0.00

(23) 16-06-23 PD

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QS1042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

Work Order ID 145910

Tuesday, June 07, 2016 8:17:07 AM

145910

Page 2

Item ID: D4149-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Lug Plate, Aft

Start Date: 5/4/2016 Start Qty: 20.00

20

Cust Item ID:

Required Date: 5/5/2016 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

Identify as per dwg & Stock Location: Store

0.00

150

Packaging

Memo

0.20

Packaging

20

DAS

6

9-89

JUL 07 2016

160

QC21- Final Inspection - Work Order Release

0.00

160

QC

Memo

2.00

Quality Control

DAS

21

9-89

JUL 08 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Tuesday, June 07, 2016 8:17:07 AM

Page 1

Work Order ID: 145910

145910

Parent Item: D4149-1

D4149-1

Parent Item Name: Crosstube Lug Plate, Aft

Start Date: 5/4/2016

Required Date: 5/5/2016

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:A 10.06.24 new issue DD verf:EC
IPP Rev:B 11.03.03 as per revC DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4149-1P		Purchased	No				Each	0.0000		20			
D4149-1P									**				
Crosstube Lug Plate, Aft													
M304S11GA		Purchased	No			100	sf	107.2349	0.1355	2.852632			
M304S11GA									**				
304/316 0.125 Sheet													

20X 8/16-6-21

DAS
13
9-89

JUL 8 8 2016

Location	Loc Qty	Loc Code
MAT020	80.99998	
M129545	31.99998	
M129972	23.5	
M134284	25.5	
TPI	26.234932	
M134604	26.234932	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval				
Description Work Order Deviation				Disposition				Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			
Root Cause				FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : _____											

DART AEROSPACE LTD		Work Order: 145910
Description: Aft Crosstube Lug Plate		Part Number: D4149-1
Inspection Dwg: D4149	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001					
Ø0.191	+0.005/-0.001					
Ø0.257	+0.006/-0.001					
Ø0.38	+0.006/-0.001					
0.380	+/-0.010					
0.469	+/-0.010					
0.310	+/-0.010					
0.750	+/-0.010					
3.25	+/-0.030					
0.65	+/-0.030					
0.63	+/-0.030					
5.46	+/-0.030					
3.80	+/-0.030					
2.13	+/-0.030					
1.313	+/-0.010					
0.625	+/-0.010					
0.375	+/-0.010					
1.175	+/-0.010					
0.752	+/-0.010					
1.588	+/-0.010					
1.587	+/-0.010					
11.15	+/-0.030					
0.750	+/-0.010					
1.55	+/-0.030					
1.12	+/-0.030					
8.42	+/-0.030					
2.70	+/-0.030					
0.125	+/-0.010					
Ø0.252	+0.003/-0.000					

Same
w/o
145911

Measured by:	Audited by:	Preliminary Approval:
Date:	Date:	Date:

Rev	Date	Change	Revised by	Approved
A	10.08.04	New Issue	KJ	
B	12.02.01	Dimensions updated per Dwg Rev C	KJ	

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY					
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
				OTHER :					

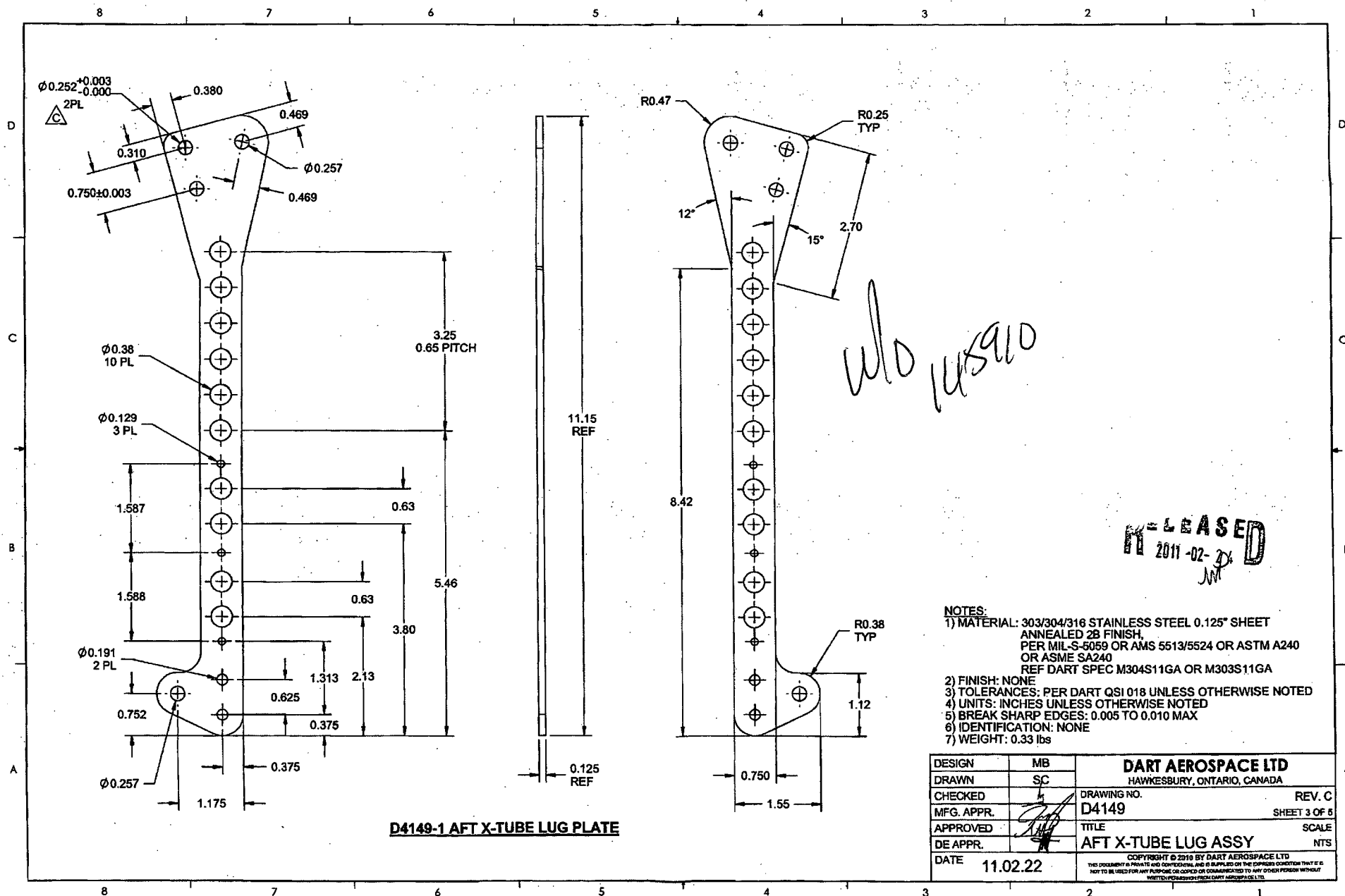
DART AEROSPACE LTD		Work Order: 145911
Description: Aft Crosstube Lug Plate		Part Number: D4149-1
Inspection Dwg: D4149 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001	.133	✓		PD-10	
Ø0.191	+0.005/-0.001	.193				
Ø0.257	+0.006/-0.001	.258				
Ø0.38	+0.006/-0.001	.378				
0.380	+/-0.010	.380				
0.469	+/-0.010	.469				
0.310	+/-0.010	.310				
0.750	+/-0.010	.750				
3.25	+/-0.030	3.25				
0.65	+/-0.030	.6				
0.63	+/-0.030	.63				
5.46	+/-0.030	5.46				
3.80	+/-0.030	3.80				
2.13	+/-0.030	2.12				
1.313	+/-0.010	1.31				
0.625	+/-0.010	.625				
0.375	+/-0.010	.375				
1.175	+/-0.010	1.175				
0.752	+/-0.010	.750				
1.588	+/-0.010	1.58				
1.587	+/-0.010	1.58				
11.15	+/-0.030	11.15				
0.750	+/-0.010	.750				
1.55	+/-0.030	1.55				
1.12	+/-0.030	1.12				
8.42	+/-0.030	8.42				
2.70	+/-0.030	2.70				
0.125	+/-0.010	.115				
Ø0.252	+0.003/-0.000	.252				

Measured by: PD	Audited by: DAS	Preliminary Approval:
Date: 16-06-23	Date: JUN 23 2016	Date:

Rev	Date	Change	Revised by	Approved
A	10.08.04	New Issue	KJ	
B	12.02.01	Dimensions updated per Dwg Rev C	KJ	



DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO32646

Purchase Order Date 6/8/2016

PO Print Date 6/8/2016

Page Number 10 of 12

Order From :

TPI INDUSTRIES INC.
148 RUE GOODFELLOW
DELSON, QUEBEC J5B 1V4
CANADA

VC-TP1001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 450-633-0484

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

Buyer

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency CAD

FOB Destination-Collect

Line Total: \$120.00

25 D2581P

Mounting Bracket

6/22/2016

Yes

6/22/2016

60.00

Each

\$5.35

\$321.00

CUT AS PER DWG D2581 REV. A
B146089
MATERIAL 304 SHEET 11GA

Line Total: \$321.00

26 D4149-1P

Crosstube Lug Plate, Aft

6/22/2016 FN

Yes

6/22/2016

20.00

Each

\$14.75

\$295.00

CUT AS PER DWG D4149 REV. C
B145910
MATERIAL 304 SHEET 11GA

Line Total: \$295.00

Note:

6/8/2016

Sp/6-6-21

T.P.I. INDUSTRIES INC.

148 GOODFELLOW
DELSON, QUÉBEC J5B 1V4
CANADA
Tel: (450) 633-0484
Fax: (450) 633-0879

Packing Slip

Packing Slip No.: 7618
Date: 2016-06-17
Page: 1

Sold to:		Ship to:	
Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada		Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada	
Order No.: 32646		Sold By: JONATHAN LESSARD	
Shipped By:		Ship Date:	
Tracking No.:			

Item No.	Unit	Description	Quantity
d3405-1 ✓	Chaque	d3405-1 ✓	✓24
d3405-3 ✓	Chaque	d3405-3 ✓	✓20
d3912-5	Chaque	d3912-5 eyebolt plate	✓24
d4150-3	Chaque	d4150-3 arm plate	24
d4149-1	Chaque	d4149-1 crosstube lug plate aft	32
d2581	Chaque	d2581 mounting bracket	60
d4151-1	Chaque	d4151-1 lower hardpoint plate	10
d4151-3	Chaque	d4151-3 upper hardpoint plate	10

201 8/6-6-21

Comment: Net / 30 from date of invoice 2% svc. chg. on invoices over 30 days

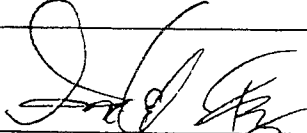
TPI Waterjet cutting follow up sheet

WC100127

machine hours	1162h
diamond hours	112h
mixing tube hours	0h
TAJ calibration	13-06-2016

customer po	part #	Qty	lot #	date done	cut by	quality spot check	Note
dart 32646	D3405-1	24	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D3405-3	20	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D3912-5	24	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D4150-3	24	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D4149-1	32	see mill test	14-06-2016	GR	Jonathan Lessard Gabriel Rioux	test approve by Eric Downing change hole size of .252 to .25
dart 32646	D2581	60	see mill test	15-06-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 32646	D4151-1	10	see mill test	15-06-2016	GR	Jonathan Lessard Gabriel Rioux	test approve by Eric Downing change hole size of .252 to .25
dart 32646	D4151-3	10	see mill test	15-06-2016	GR	Jonathan Lessard Gabriel Rioux	change hole size of .252 to .25

Opérateur



Superviseur

